

FISH CULTURE IN INDIANA.

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The high price of animal food in the four standard forms in this country, to-wit: beef, pork, mutton and poultry, invites an inquiry into the possibility of some cheaper supply for this demand. Philanthropists have proposed to solve this problem by diminishing the demand rather than by increasing the supply. But in this latitude this will hardly be possible. I do not mean to say that a vegetarian might not live and enjoy good health, and even endure labor without the luxury of animal food, but my doubt is whether he could be induced to do so voluntarily.

The cool, bracing air of the winter months, and a good part of the fall and spring months, as well, tend to hasten the transformation of the living tissues, and this creates an instinctive demand for concentrated forms of food, and this demand few will be heedless of except from necessity. Even the savage in all countries and in all ages, when the chase fails to supply him with food, resorts to the waters to make good the deficiency, and may not our civilization profit by the hint?

As an apology for their neglect of this matter, our people plead their want of knowledge on almost every subject connected with fish culture. This may be the case but it is no excuse for their remaining in ignorance of a profitable branch of business. It is asserted on good authority that more pounds of wholesome food can be produced, in a given time, from one acre of a well-stocked pond than can be made in beef or pork from ten acres, and with much less labor or risk.

The first consideration is to determine what kind of fish you will raise. Our streams are well stocked with native species of fish, many of which will bear domestication well. A few of our native fishes are migratory, going south at least as far as the great rivers every winter. These will not well endure the confinement of a pond. The Sucker family (*Catostomi*) furnish several species, many of which are stationary and easily domesticated. The flesh is of fair quality but is objectionable on account of the great number of small bones it contains. The Catfish family (*Silurus*) presents two or three native species that may be raised in ponds with only a poor supply of running water, but their flesh is not generally esteemed

as first quality. The yellow cat is the best species of this genus, but it is of a smaller growth than others of the family. Where a pond has no supply of running water, the yellow catfish may be profitably raised. The Bass family (*Labrax*) furnish the best variety of food of any of our fresh-water fishes. The native black bass of our rivers and the rock bass or red-eyes are the best species for domestication that this family furnishes. Of the Salmon family, the trout species, of which there are a number of varieties, furnish the best pond fish, where the water is adapted to their habits. They are not natives of Indiana, except, perhaps, in some of the small lakes in the extreme north of the State.

Of foreign fishes, the carp (*Cyprinus carpio*) is the only one that has been successfully imported into this country. It has been raised in a domestic way for centuries in northern Europe, where it furnishes a large supply of wholesome food at a small expense. It was first introduced here in 1831, by Henry Robison, of Newburg, N. Y. His success in its culture induced others to engage in the business, until its importance became so apparent that the general government has taken steps to promote the industry.

In fish culture it is advisable to keep the different species of fish in separate ponds, if more than one kind be raised. After determining the kind to be raised, the next step will be to adapt the pond to the species selected. If it is proposed to raise bass or trout, the pond should be at least four feet deep and should be well supplied with clear spring water. The bass is exclusively a flesh eater, and though they will find much to gratify this appetite in the insects and worms that may infest the pond, yet they should be fed butchers' offal or some other animal food to prevent them from feeding on their own young, which they are apt to do when pressed by hunger; though a bass at a single spawning will produce from 500 to 1000 young, yet they do not multiply rapidly on account of this cannibal propensity. The trout, though a flesh eater, is less disposed to devour its own young. The bass will guard her nest with the utmost vigilance for six weeks, but after that she has no regard for her young. This class gives us the best of our fresh water fishes, but they are the most difficult to raise. The other class, consisting of suckers, catfish and carp, will thrive in a pond though the water be neither clear nor cold, and they prefer a muddy bottom to one of gravel or rock.

The carp is a vegetarian in its habits, feeding on aquatic herbage and on garden vegetables and fruits or grain when fed to them. They will, however, devour insects or worms when these come in their way, but they never eat the young of their own kind. On this account they multiply with almost incredible rapidity. They grow to the size of eight or ten inches in length in a year, if they are well fed, and they continue their growth till they are three or four years old, and attain a weight of eight or ten pounds.

A carp or cat-fish pond may be supplied from surface drainage, or from the discharge of tile drains. It will be safer, however, to have a well and wind pump to keep a supply of fresh water if no spring be convenient for this purpose. A carp pond will be the better of broad, shallow margins where water grasses and weeds grow, but the centre should have a depth of five or six feet to furnish winter protection for the fish. If the pond be closely covered with ice, and this continues for several days, openings should be made in the ice to the water below, and this should be repeated at intervals of a day or two as long as the freeze continues. If the pond be fed from a spring the point at the entrance of the stream will be kept open and other openings will not be necessary. The general directions for the construction and management of a carp pond will serve for one designed for cat-fish or suckers. Though the cat-fish is to some extent carnivorous in its habits, yet it does not devour its young. It will be better, however, to keep each kind in separate ponds. When kept apart from fishes of prey, they will multiply with astonishing rapidity.

Of all our industries none promises a more profitable return than this much neglected one of fish culture. If market be convenient, it may be made a source of constant income; if not so situated, it may be used to supply the home table, and thus permit more of the beef and pork of the farm to go into the general market.

Something has been done, and much may be done in the way of restocking our streams to increase the supply of fish as an article of food; but when we have done the most, the increased supply is a common stock, a condition which belongs to the savage state of society, and not to an advanced civilization. When fish culture becomes a regular farm industry then the use of fish as an article of daily food will be assured and our tables supplied with a palatable, nutritious and wholesome article of diet at a cheaper rate than we can now furnish any form of animal food.

The ocean and lakes now supplement, to some extent, the "hog and hominy" of the last generation, and this source of supply appears to be inexhaustible.

Professor Huxley, in his address at the late Fisheries Exhibition, said that the great school of codfish which annually moves down the coast of Norway for two months, has a depth of more than 100 feet, and an indefinite width. Each square mile of this school he estimates at 120,000,000 of fishes—enough to supply the city of London with animal food for a year. Similar schools come down the coast of Newfoundland and of British Columbia annually, to say nothing of the immense droves of mackerel, salmon and other marine fishes. Though the fisheries on both continents appear to be very extensive, yet not one in a million of the fish serves as human food, so really inexhaustible is the supply. But the hazard and labor of the fisheries, the loss of quality by salting, or other methods of keeping, together with the expense of transportation, renders it more

economical to raise our own supply and bring them to the table fresh and in good condition.

Ponds can be stocked with our native fishes from the creeks and rivers of the vicinity, with but little trouble; or if carp raising be preferred, the supply for a start may be readily obtained through the State Fish Commissioner, Hon. Calvin Fletcher, Spencer, Owen county, Ind., or at little expense, from private parties who are successfully raising carp in various parts of the country. At any rate, let this important industry be no longer neglected.